

## Megaplex-2100/2104 Module

## MSL-8

## 8-Port SHDSL E1 Module



- Up to 2048 kbps payload per port over 2-wire copper cables
- Range up to 10.6 km (6.6 miles) over 26 AWG 2-wire cable
- Remote or Central function programmable per channel
- Inband management (EOC) according to G.991.2 and dedicated TS via one of the timeslots
- Compatible with other RAD SHDSL products

The Megaplex MSL-8 module uses Single-pair High speed Digital Subscriber Line (SHDSL) technology, as standardized by ITU-T Rec. G.991.2. This SHDSL E1 module offers a cost-effective solution for delivering digital data to customer premises over the existing copper cables of the distribution network, while eliminating the need for repeaters.

Each MSL port is a multirate SHDSL modem supporting user-selectable data rates which are multiples of 64 kbps, starting from 192 kbps up to 2048 kbps (32 timeslots). As the payload increases, range decreases. *Table 1* lists typical ranges versus the payload data rates.

8 SHDSL E1 ports  
complying with ITU-T  
Rec. G.991.2



# MSL-8

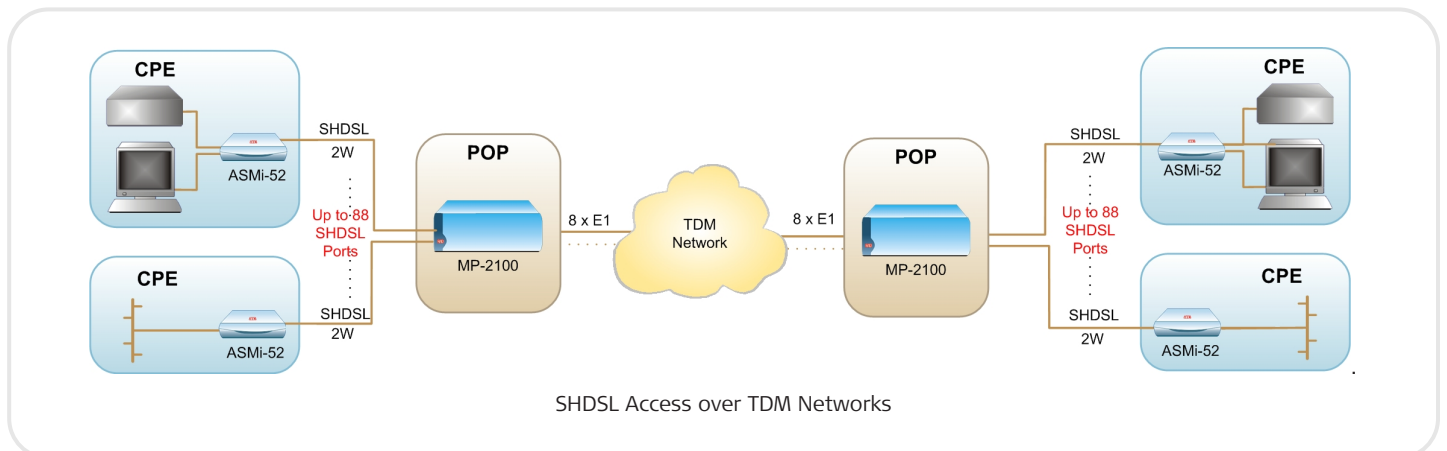
## 8-Port SHDSL E1 Module

The MSL-8 module is user-configurable for operation in accordance with the following standards:

- ITU-T Rec. G.991.2. Annex B (for compatibility with European, or similar networks)
- Annex A (for compatibility with North American, or similar networks)

The module can operate as a Central SHDSL Terminal Unit (STU-C) or as a Remote (STU-R) SHDSL Terminal Unit (programmable per module channel) opposite RAD's ASMi-52, LRS-52, FCD-IP or FCD-IPM devices.

Diagnostic capabilities feature local and remote loopbacks on each module port, and local and remote loopbacks per timeslot.



## Specifications

### SHDSL PORTS

**Number of Ports per Module**  
8

**Compliance**

ITU-T G.991.2 Annex A/B  
(SHDSL Standard)

**Transmitting Line Power**

Up to 16.8 dBm

**Signal Format**

TC-PAM

**Transmission Line**

Single unconditioned twisted pair

**Impedance**

135Ω

**Connector**

SCSI-40, convertible to 8 RJ-45 connectors  
via adaptor cable

**Typical Ranges**

Depend on the data rate and the cable  
diameter. For 26 AWG (0.4mm) cable with  
13.5 dBm line power, see *Table 1*.

Table 1. Typical Ranges

Data Rate	Range	
	[kbps]	[km] [ft]
192	10.6	35.000
256	8.2	27.000
768	6.5	21.500
1544	4.9	16.200
2048	4.0	13.000

**Status Dual-Color Indicator (per link)**

Lights steadily in green when the port is  
connected and carries traffic

Flashes in red during handshaking  
between the MSL-8 port and the  
remote unit

Lights in red during local loss of  
synchronization or red alarm

Off when not connected

### DIAGNOSTICS

**Loopbacks**

User-activated local and remote loopback  
on each port

Local timeslot loopback

Remote timeslot loopback

Remote loopback on the remote unit

### GENERAL

**Power Consumption**

12.9W

Table 1. Megaplex Main Link Modules

	ML-E1/T1	MLF-E1/T1	ML-8E1/T1	MSL-8	ML-IP	ML-20N
<b>Interface Type</b>	E1/T1	E1/T1	E1/T1	SHDSL	ETH (TDMoIP)	n x 64 kbps
<b>Number of Channels</b>	1/2	1/2	8	8	2	1/2
<b>Redundancy</b>	Link	Link	None	None	Bundle	Link
<b>Ring</b>	E1/T1	E1/T1	None	None	RFER	None

## MSL-8

### 8-Port SHDSL E1 Module

## Ordering

### MP-2100M-MSL-8/E1

8-Port E1 module with 2-wire SHDSL interface for Megaplex-2100 and Megaplex-2104 chassis

### OPTIONAL ACCESSORIES

#### CBL-MSL8-SCS40/RJ45

Cable for splitting the MSL-8 single 40-pin SCSI connector to 8 x RJ-45 connectors

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